UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

RADIO STATION AUTHORIZATION

Name: Row 44 Inc.
Call Sign: E080100
Authorization Type: Modification of License
File Number: SES-MOD-20171002-01094
Non Common Carrier **Grant date:** 11/22/2017 **Expiration Date:** 08/05/2024

Nature of Service: Fixed Satellite Service
Nature of Service: Other

Class of Station: Other

A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1)	Remotes1	AeroSat Avi CONUS, +TERR, INTERNATIONAL WATERS				NA	
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.					
2)	Remotes2	TECOM CONUS,+ TERR, INTERNATIONAL WATERS				NA	
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.					
3)	Remotes3	QEST CONUS,+ TERR, INTERNATIONAL WATERS				NA	
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.					

Subject to the provisions of the Communications Act of 1934, The Communications Satellite Act of 1962, subsequent acts and treaties, and all present and future regulations made by this Commission, and further subject to the conditions and requirements set forth in this license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning August 5, 2009 (3 AM Eastern Standard Time) and ending August 5, 2024 (3 AM Eastern Standard Time) . The required date of completion of construction and commencement of operation is November 22, 2018 (3 AM Eastern Standard Time) . Grantee must file with the Commission a certification upon completion of construction and commencement of operation.

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B) Particulars of Operations

The General Provision 1010 applies to all receiving frequency bands.
The General Provision 1900 applies to all transmitting frequency bands.
For the text of these provisions, refer to Section H.

#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1)	14050.0000-14470.0000	H,V	1M60G7D	Tx	38.60	14.60	AeroSat Av		QPSK OR OCTAL PSK
2)	11700.0000-12200.0000	H,V	36M0G7D	Rx	0.00	0.00	AeroSat Av		QPSK OR OCTAL PSK
3)	14050.0000-14470.0000	H,V	1M02G7D	Tx	41.90	17.80	QEST		QPSK OR OCTAL PSK
4)	14050.0000-14470.0000	H,V	2M04G7D	Tx	41.90	14.80	QEST		QPSK OR OCTAL PSK
5)	14050.0000-14470.0000	H,V	4M09G7D	Tx	41.90	11.80	QEST		QPSK OR OCTAL PSK
6)	12200.0000-12500.0000	H,V	36M0G7D	Rx			QEST	90450	QPSK OR OCTAL PSK
7)	11700.0000-12200.0000	H,V	36M0G7D	Rx			QEST		QPSK OR OCTAL PSK
8)	11450.0000-11700.0000	H,V	36M0G7D	Rx			QEST		QPSK OR OCTAL PSK
9)	11200.0000-11450.0000	H,V	36M0G7D	Rx			QEST	90450	QPSK OR OCTAL PSK
10)	10950.0000-11200.0000	H,V	36M0G7D	Rx			QEST		QPSK OR OCTAL PSK
11)	14050.0000-14470.0000	H,V	1M60G7D	Tx	38.80	14.80	TECOM		QPSK OR OCTAL PSK
12)	14050.0000-14470.0000	H,V	3M20G7D	Tx	41.80	14.80	TECOM		QPSK OR OCTAL PSK
13)	14050.0000-14470.0000	H,V	1M20G7D	Tx	42.80	18.70	TECOM	90362	QPSK OR OCTAL PSK
14)	14050.0000-14470.0000	H,V	1M60G7D	Tx	36.00	11.90	TECOM	90200	QPSK OR OCTAL PSK
15)	14050.0000-14470.0000	H,V	1M60G7D	Tx	41.30	17.20	TECOM	90220	QPSK OR OCTAL PSK
16)	14050.0000-14470.0000	H,V	2M04G7D	Tx	42.80	15.70	TECOM	90362	QPSK OR OCTAL PSK
17)	14050.0000-14470.0000	H,V	3M20G7D	Tx	43.80	16.70	TECOM	90220	QPSK OR OCTAL PSK
18)	14050.0000-14470.0000	H,V	4M09G7D	Tx	42.80	12.70	TECOM	90362	QPSK OR OCTAL PSK
19)	14050.0000-14470.0000	H,V	1M60G7D	Tx	41.30	16.20	TECOM	90361 90362	QPSK OR OCTAL PSK
20)	14050.0000-14470.0000	H,V	3M20G7D	Tx	43.80	16.20	TECOM	90200 90361 90362	QPSK OR OCTAL PSK
21)	14050.0000-14470.0000	H,V	6M40G7D	Tx	43.80	13.70	TECOM	90221 90361 90362	QPSK OR OCTAL PSK
22)	12250.0000-12750.0000	H,V	36M0G7D	Rx			TECOM	90450	QPSK OR OCTAL PSK

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B) Particulars of Operations

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The General Provision 1900 applies to all transmitting frequency bands.
For the text of these provisions, refer to Section H.

#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
23)	11450.0000-12200.0000	H,V	36M0G7D	Rx			TECOM		QPSK OR OCTAL PSK
24)	11200.0000-11450.0000	H,V	36M0G7D	Rx			TECOM	90450	QPSK OR OCTAL PSK
25)	10950.0000-11200.0000	H,V	36M0G7D	Rx			TECOM		QPSK OR OCTAL PSK
26)	10950.0000-11200.0000	H,V	36M0G7D	Rx			TECOM		QPSK OR OCTAL PSK

C) Frequency Coordination Limits

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.) East Limit	Satellite Arc (Deg. Long.) West Limit	Elevation (Degrees) East Limit	Elevation (Degrees) West Limit	Azimuth (Degrees) East Limit	Azimuth (Degrees) West Limit	Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
1)	14050.0000-14470.0000	83.0W	127.0W	35.0	11.2	206.7	138.7	5.4	AeroSat Av
2)	11700.0000-12200.0000	83.0W	127.0W	35.0	11.2	206.7	138.7	0	AeroSat Av
3)	10950.0000-11200.0000	40.5W	40.5W	28.7	17.5	323.4	299.2		TECOM
4)	14050.0000-14470.0000	67.0W	67.0W	35.0	54.0	113.0	194.0	13.3	TECOM
5)	14050.0000-14470.0000	129.2W	129.2W	10.0	34.0	257.0	185.0	-14.3	TECOM
6)	11700.0000-12200.0000	129.2W	129.2W	10.0	34.0	257.0	185.0		TECOM
7)	11700.0000-12200.0000	83.0W	127.0W	35.0	11.2	206.7	138.7		TECOM
8)	14050.0000-14470.0000	83.0W	127.0W	35.0	11.2	206.7	138.7	3	TECOM
9)	11450.0000-12200.0000	37.5W	127.0W	20.9	02.6	194.4	119.5		TECOM
10)	14050.0000-14470.0000	37.5W	127.0W	20.9	02.6	194.4	119.5	13.3	TECOM
11)	12250.0000-12750.0000	166.0E	166.0E	39.6	06.3	127.5	259.8		TECOM
12)	14050.0000-14470.0000	37.5W	194.0W	20.9	06.3	194.4	259.8	13.3	TECOM
13)	11450.0000-11700.0000	37.5W	127.0W	20.9	02.6	194.4	119.5		TECOM
14)	11700.0000-12200.0000	37.5W	194.0W	20.9	06.3	194.4	259.8	0	TECOM
15)	14050.0000-14470.0000	84.8W	84.8W	11.1	27.7	241.9	139.6	13.3	TECOM
16)	11700.0000-12200.0000	84.8W	84.8W	11.1	27.7	241.9	139.6		TECOM
17)	14050.0000-14470.0000	114.9W	114.9W	10.0	18.8	115.4	211.9	13.3	TECOM
18)	11700.0000-12200.0000	114.9W	114.9W	10.0	18.8	115.4	211.9		TECOM
19)	10950.0000-11200.0000	50.0W	50.0W	90.0	90.0	138.0	138.0		TECOM
20)	11200.0000-11450.0000	50.0W	50.0W	90.0	90.0	138.0	138.0		TECOM

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C) Frequency Coordination Limits

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.) East Limit	Satellite Arc (Deg. Long.) West Limit	Elevation (Degrees) East Limit	Elevation (Degrees) West Limit	Azimuth (Degrees) East Limit	Azimuth (Degrees) West Limit	Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
21)	14050.0000-14470.0000	50.0W-129.2W		90.0-35.0		138.7-011.2		-4.5	QEST
22)	11700.0000-12200.0000	50.0W-129.2W		90.0-35.0		138.7-011.7			QEST
23)	11450.0000-11700.0000	50.0W-50.0W		90.0-90.0		138.0-138.0			QEST
24)	11200.0000-11450.0000	50.0W-50.0W		90.0-90.0		138.0-138.0			QEST
25)	10950.0000-11200.0000	50.0W-50.0W		90.0-90.0		138.0-138.0			QEST
26)	14050.0000-14470.0000	67.0W-67.0W		35.0-54.0		113.0-194.0		13.3	QEST

D) Points of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

1) Remotes1 to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)
2) Remotes1 to HORIZONS 1 (S2475) @ 127 degrees W.L. (Japan-licensed)
3) Remotes1 to AMC-9 (S2434) @ 83 degrees W.L. (U.S.-licensed)
4) Remotes2 to INTELSAT 19 (S2850) @ 166.0 degrees E.L. (U.S.-licensed)
5) Remotes2 to TELSTAR 11N (S2357) @ 37.55 degrees W.L. (U.S.-licensed)
6) Remotes2 to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)
7) Remotes2 to HORIZONS 1 (S2475) @ 127 degrees W.L. (Japan-licensed)
8) Remotes2 to AMC-9 (S2434) @ 83 degrees W.L. (U.S.-licensed)
9) Remotes2 to EUTELSAT 117WA (S2873) @ 116.8 degrees W.L. (formerly SATMEX 8) (Mexico-licensed)
10) Remotes2 to Estrela do Sul 2 (S2821) @ 63 degrees W.L. (Brazil-licensed)
11) Remotes2 to EUTELSAT 115WA (S2589) @ 114.9 degrees W.L. (formerly SATMEX 5) (Mexico-licensed)
12) Remotes2 to AMC 2 (S2134) @ 84.85 W.L. (formerly GE-2) (U.S.-Licensed)
13) Remotes2 to SES-6 (S2870) @ 40.5 degrees W.L. (Netherlands-licensed)
14) Remotes2 to AMC-3 (S2162) @ 72 degrees W.L. (U.S.-licensed)
15) Remotes2 to AMC 1 (S2445) @ 129.15 degrees W.L. (U.S.-licensed)
16) Remotes2 to EUTELSAT 115WB (S2938) @ 114.9 degrees W.L. (formerly SATMEX 7) (Mexico-licensed)
17) Remotes2 to INTELSAT 29e (S2913) @ 50.0 degrees W.L. (U.S.-licensed)
18) Remotes2 to SES-10 (S2950) @ 66.9 degrees W.L. (U.S.-licensed)
19) Remotes2 to Telstar 12 (S2462) @ 109.2 W.L. (U.S.-licensed)
20) Remotes3 to EUTELSAT 115WB (S2938) @ 114.9 degrees W.L. (formerly SATMEX 7) (Mexico-licensed)
21) Remotes3 to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)
22) Remotes3 to INTELSAT 29e (S2913) @ 50.0 degrees W.L. (U.S.-licensed)
23) Remotes3 to AMC 2 (S2134) @ 84.85 W.L. (formerly GE-2) (U.S.-Licensed)

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D) Points of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

24) Remotes3 to AMC 1 (S2445) @ 129.15 degrees W.L. (U.S.-licensed)
25) Remotes3 to AMC-9 (S2434) @ 83 degrees W.L. (U.S.-licensed)
26) Remotes3 to AMC-3 (S2162) @ 72 degrees W.L. (U.S.-licensed)
27) Remotes3 to SES-10 (S2950) @ 66.9 degrees W.L. (U.S.-licensed)
28) Remotes3 to Telstar 12 (S2462) @ 109.2 W.L. (U.S.-licensed)

E) Antenna Facilities

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
Remotes1	AeroSat Av	1000	0.6	AeroSat Avionics	70-100-0000-01		0 AGL	

Max Gains(s): 28.6 dBi @ 14.4700 GHz 31.8 dBi @ 11.7000 GHz
Maximum total input power at antenna flange (Watts) = 10.00
Maximum aggregate output EIRP for all carriers (dBW) = 41.80

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
Remotes3	QEST	1000	0.63	QEST	Q050000			

Max Gains(s): 32.1 dBi @ 11.9500 GHz 33.6 dBi @ 14.2500 GHz
Maximum total input power at antenna flange (Watts) = 25.00
Maximum aggregate output EIRP for all carriers (dBW) = 41.90

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
Remotes2	TECOM	1000	0.62	TECOM	Ku-Stream			

Max Gains(s): 28.8 dBi @ 14.2500 GHz 31.1 dBi @ 11.7500 GHz
Maximum total input power at antenna flange (Watts) = 31.60
Maximum aggregate output EIRP for all carriers (dBW) = 43.80

F) Remote Control Point:

Remotes1 One Aerojet Way **Call Sign:** E940460
North Las Vegas, Clark, NV 89030
(301) 601-7205

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F) Remote Control Point:

Remotes2 ONE AEROJET WAY **Call Sign:** E940460
NORTH LAS VEGAS, CLARK, NV 89030
301-601-7205

Remotes3 ONE AEROJET WAY **Call Sign:** E940460
NORTH LAS VEGAS, CLARK, NV 89030
301-601-7205

G) Antenna Structure marking and lighting requirements:

None unless otherwise specified under Special and General Provisions

H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

4 --- Licensee must ensure that a current listing of the name, title, mailing address, email address, and telephone number of the responsible point of contact are on file at the FCC. Any changes must be filed electronically in the International Bureau Filing System (IBFS) in the "Other Filings" tab within 10 days of the change.

90062 --- Operation pursuant to this authorization outside the United States in the 14.0-14.5 GHz band must be in compliance with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz band.

90066 --- Stations authorized herein must not be used to provide air traffic control communications.

90067 --- Operation in the territory or airspace of any country other than the United States must be in compliance with the applicable laws, regulations, and licensing procedures of that country, as well as with the conditions of this authorization.

90075 --- Licensee is afforded 30 days from the date of release of this grant and authorization to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of the authorization as conditioned.

90104 --- For any new antenna authorized by this grant, the licensee must file with the Commission a certification including the following information: name of the licensee, file number of the application, call sign of the antenna, Site ID, date of the license and certification that the antenna model was put into operation.

90105 --- Authority is granted to operate this station by remote control provided that the operator is responsible for ensuring the operations are in accordance with the terms and conditions of the license and pursuant to Section 25.271 of the Commission's rules. 47 C.F.R 25.271.

90116 --- The licensee must maintain a U.S. point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein. The licensee shall have available, at all times, the technical personnel necessary to perform supervision of remote station operations.

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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

90122 --- The earth stations in this blanket license are operated by remote control. The remote control point is a material term of the license and may not be changed without prior authorization under Section 25.117 of the Commission's rules. Public Notice "The International Bureau Provides Guidance Concerning the Relocation of Earth Station Remote Control Points," DA 06-978 (rel. May 4, 2006).

90123 --- Operations authorized pursuant to this license are operations by U.S.-registered aircraft anywhere within the coverage area/frequency bands identified in the application for the satellites listed as points of communication. Operations authorized pursuant to this license also include operations by non-U.S.-registered aircraft within U.S. territory, including territorial waters. Authorization for operations by U.S.-registered aircraft outside U.S. territory, pursuant to this license, does not constitute a grant of access to the market in the United States under the Commission's DISCO II policies.

90158 --- Communications between Row 44 Inc.'s aircraft earth stations and the Horizon 1 space station must be in compliance with all existing and future space station coordination agreements reached between Japan and other Administrations.

90159 --- Communications between Row 44 Inc.'s aircraft earth stations and the Estrela Do Sul 2 space station must be in compliance with all existing and future space station coordination agreements reached between Brazil and other Administrations.

90162 --- Waiver of the Table of Frequency Allocation, Section 2.106 of the Commission's rules, 47 C.F.R. § 2.106, is granted for space-to-Earth operations, on an unprotected, non-interference basis, in the 12.25-12.75 GHz frequency band from Intelsat 19 in ITU Region 2, including portions of U.S. airspace. Reception of downlink transmissions by Row 44's aircraft earth stations pursuant to grant of Row 44's waiver request is limited to the antenna beam patterns provided in IBFS File No. SAT-MOD-20120628-00107.

90164 --- Row 44 Inc. shall comply with any pertinent limits established by the International Telecommunication Union to protect other services allocated internationally.

90199 --- Reception of downlink transmissions is on a non-interference, non-protected basis from the following geostationary orbit space station(s): Intelsat 19 in the 12.25-12.75 GHz frequency band. When receiving transmissions from the satellite in this frequency band, the aircraft earth station operations authorized herein must accept interference from any radio station operating in conformance with the U.S. Table of Frequency Allocations. Operations in this band were not requested with any other satellites.

90200 --- For communications with AMC-2, SES-6, AMC-9, & SES-1 only. Applies for specific emissions identified in Section B of this Authorization.

90220 --- For communications with AMC-3 only. Applies for specific emissions identified in Section B of this Authorization.

90221 --- For communications with AMC-2, SES-6, AMC-9, SES-1, and AMC-3 only. Applies for specific emissions identified in Section B of this Authorization.

90246 --- ESAAs authorized herein must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.

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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

90247 --- ESAAs authorized herein must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable transmission" and "disable transmission" commands from the network control center and must cease transmission immediately after receiving a "parameter change" command until receiving an "enable transmission" command from the network control center. The network control center must monitor operation of each ESAA to determine if it is malfunctioning, and each ESAA must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed-satellite service network.

90259 --- For purposes of this authorization, the term earth stations aboard aircraft, or ESAA, is used to refer to any earth station on aircraft communicating with Fixed-Satellite Service (FSS) geostationary-orbit (GSO) space stations, without reference to the technical and licensing rules specifically adopted for earth stations on aircraft in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz, and 14.0-14.5 GHz frequency bands. See 47 C.F.R. § 25.227; Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.34-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands, IB Docket No. 12-376, Notice of Proposed Rulemaking and Report and Order, FCC 12-161, 27 FCC Rcd 16510 (2012); Revisions of Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands, IB Docket No. 12-376, Second Report and Order on Reconsideration, FCC 14-45, 29 FCC Rcd 4226 (2014). Nothing in this authorization extends those technical and licensing rules to earth stations on aircraft not operating in those specified frequency bands.

90304 --- Operation pursuant to this authorization must be in compliance with the terms of the licensee's coordination agreements with the National Science Foundation and the National Aeronautics and Space Administration pertaining to operation of ESAAs in the Ku-Band.

90305 --- When operating in international airspace within line-of-sight of the territory of a foreign administration where Fixed Service networks have a primary allocation in the 14.0-14.5 GHz band, an ESAA must not produce ground-level power flux density (pfd) in such territory in excess of the following values unless the foreign administration has imposed other conditions for protecting its FS stations: -132 + 0.5 x THETA dB(W/(m^2 MHz)) for THETA <= 40° ; -112 dB(W/(m^2 MHz)) for 40° < THETA <= 90°. Where: THETA is the angle of arrival of the radio-frequency wave in degrees above the horizontal, and the aforementioned limits relate to the pfd and angles of arrival that would be obtained under free space propagation conditions.

90308 --- The ESAAs are authorized to receive downlink transmissions in the 11.7-12.2 GHz frequency band from the geostationary orbit space stations listed as a point of communication in Section D above subject to the particulars of operation and identified frequencies included in Section B above and the licensee's application. Reception is authorized on a primary basis as an application of the Fixed-Satellite Service pursuant to the allocation determinations and service rules in IB Docket No.12-376 (Docket Name: Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands). Operations must be in accordance with the Federal Communications Commission's rules not waived herein, the technical specifications contained in licensee's application, and are subject to the other conditions listed in the authorization.

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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

90309 --- The ESAAs are authorized to receive downlink transmissions in the 10.95-11.2 GHz and 11.45-11.7 GHz frequency band from the geostationary orbit space stations listed as a point of communication in Section D above subject to the particulars of operation and identified frequencies included in Section B above and the licensee's application. Reception is authorized on an unprotected basis as an application of the Fixed-Satellite Service pursuant to the allocation determinations and service rules in IB Docket No.12-376 (Docket Name: Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands). Operations must be in accordance with the Federal Communications Commission's rules not waived herein, the technical specifications contained in licensee's application, and are subject to the other conditions listed in the authorization.

90310 --- For each ESAA transmitter, the licensee shall maintain records of the following data for each operating ESAA, a record of the aircraft location (i.e., latitude/longitude/altitude), transmit frequency, channel bandwidth and satellite used shall be time annotated and maintained for a period of not less than one year. Records shall be recorded at time intervals no greater than one (1) minute while the ESAA is transmitting. The ESAA operator shall make this data available, in the form of a comma delimited electronic spreadsheet, within 24 hours of a request from the Commission, NTIA, or a frequency coordinator for purposes of resolving harmful interference events. A description of the units (i.e., degrees, minutes, MHz ...) in which the records values are recorded will be supplied along with the records.

90311 --- The ESAAs are authorized to transmit in the 14.0-14.5 GHz frequency band to the geostationary orbit space stations listed as a point of communication in Section D above subject to the particulars of operation and identified frequencies included in Section B above and the licensee's application. Such transmissions are authorized on a primary basis as an application of the Fixed-Satellite Service pursuant to the allocation determinations and service rules in IB Docket No. 12-376 (Docket Name: Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands). Operations must be in accordance with the Federal Communications Commission's rules not waived herein, the technical specifications contained in licensee's application, and are subject to the other conditions listed in the authorization.

90361 --- For communications with AMC-1 only. Applies for specific emissions identified in Section B of this Authorization.

90362 --- For communications with EUTELSAT 115WB only. Applies for specific emissions identified in Section B of this Authorization.

90398 --- Changes to previously authorized transmitting facilities, operations and devices regulated by the Commission that may have significant environmental impact, and are not excluded by §1.1306, require the preparation of an Environmental Assessment (EA) by the licensee. (See 47 C.F.R. §§1.1307, 1.1308 and 1.1311)

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Authorization Type: Modification of License **File Number:** SES-MOD-20171002-01094
Non Common Carrier **Grant date:** 11/22/2017 **Expiration Date:** 08/05/2024

H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

90399 --- The licensee shall, at all times, take all necessary measures to ensure that operation of this (these) authorized earth station(s) does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR §§ 1.1307(b) and 1.1310. Physical measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions, such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling, or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.

90423 --- Communications between Row 44 Inc.'s ESAAs and the Eutelsat 115WA (formerly Satmex 5), Eutelsat 117WA (formerly Satmex 8) and Eutelsat 115WB space stations must be in compliance with all existing and future space station coordination agreements reached between Mexico and other Administrations

90424 --- Communications between Row 44 Inc.'s ESAAs and the SES-6 and SES-10 space stations must be in compliance with all existing and future space station coordination agreements reached between the Netherlands and other Administrations.

90425 --- Operation pursuant to this authorization must be in compliance with the terms of coordination agreements between the operators of the AMC-2, AMC-9, AMC-3, Horizons 1, SES-1, SES-6, Intelsat 19, Eutelsat 115WB, Eutelsat 115WA (formerly Satmex 5), Eutelsat 117WA (formerly Satmex 8), Telstar 11N, Estrela do Sul 2, SES-10, and Intelsat 29e space stations and operators of other Ku-band geostationary space stations within six angular degrees of those space stations. In the event that another GSO Fixed-Satellite Service space station commences operation in the 14.0-14.5 GHz band at a location within six degrees of any of these space stations, aircraft earth stations operating pursuant to this authorization must cease transmitting to that space station unless and until such operation has been coordinated with the new space station's operator or Row 44 Inc. demonstrates that such operation will not cause harmful interference to the new co-frequency space station.

90426 --- Waiver of the Table of Frequency Allocation, Section 2.106 and Footnote NG52 of the Commission's rules, 47 C.F.R. § 2.106, NG52, is granted for space-to-Earth ESAA operations, on an unprotected, non-interference basis, in the 11.2-11.45 and 12.2-12.5 GHz frequency band from Intelsat 29e in ITU Region 2, including U.S. airspace. Operations in this band are authorized based upon and subject to the conditions, waivers, and findings specified for Call Sign S2913. See IBFS File Nos. SAT-MOD-20130722-00097 and SAT-AMD-20140718-00087.

90450 --- Operations will exclude frequencies 11.2-11.45 GHz (space-to-Earth) and 12.25-12.75 GHz (space-to-Earth) with respect to satellite Telstar 12 (Call Sign S2462) at orbital location 109.2° W.

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

RADIO STATION AUTHORIZATION

Name: Row 44 Inc. **Call Sign:** E080100
Authorization Type: Modification of License **File Number:** SES-MOD-20171002-01094
Non Common Carrier **Grant date:** 11/22/2017 **Expiration Date:** 08/05/2024

B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R.§ 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station does not meet each required construction deadline by the required date of completion unless, before such date(s), a specific application is timely filed to request an extension of the construction deadline(s), supported with good cause why that failure to construct by the required date was due to factors not under control of the grantee.

Licensees are required to pay annual regulatory fees related to this authorization. The requirement to collect annual regulatory fees from regulatees is contained in Public Law 103-66, "The Omnibus Budget Reconciliation Act of 1993." These regulatory fees, which are likely to change each fiscal year, are used to offset costs associated with the Commission's enforcement, public service, international and policy and rulemaking activities. The Commission issues a Report and Order each year, setting the new regulatory fee rates. Receive only earth stations are exempt from payment of regulatory fees.

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